



SHOWCASE PROJECT: CREE LIGHTING — 50001 READY FACILITY

SOLUTION OVERVIEW

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Accelerating energy savings with 50001 Ready

Cree Lighting, a company of IDEAL INDUSTRIES, provides innovative LED and sensor-integrated intelligent lighting solutions for commercial, industrial, and consumer applications across North America and Europe. Its indoor and outdoor lighting and wireless control technologies serve office and industrial buildings, schools and universities, municipalities, healthcare facilities, retail gas stations, and more.

Cree Lighting's main manufacturing and assembly facility located in Racine, Wisconsin obtained 50001 Ready recognition in May 2020. The 640,000-square-foot facility includes a warehouse and distribution center and has more than 800 administrative and manufacturing employees that operate on a three-shift schedule (24/5). The team is making plans to implement 50001 Ready at its Durham, North Carolina headquarters next, which includes its research and development and intelligent lighting test labs.

Driven by corporate and customer commitment to environmental performance, the company has been certified to the ISO 9001 quality management standard and to the ISO 14001 environmental management standard since 2016. Cree Lighting began working with Wisconsin Focus on Energy to set energy benchmarks and assess potential energy projects. While Cree Lighting had made great strides in energy performance, its overall approach to energy management lacked cohesion, so implementing 50001 Ready, based on the ISO 50001 energy management standard, was a natural next step. Wisconsin Focus on Energy assisted the Cree Lighting team in their pursuit of 50001 Ready recognition. With a 50001 Ready energy management system now in place, the company strategically evaluates operational changes and equipment purchases to improve its efficiency within the broader context of preventive maintenance, significant energy users, and control systems.

LOCATION

Racine, Wisconsin

SOLUTIONS

Members of the Cree Lighting energy team learned about 50001 Ready from their new energy manager and other companies in the Focus on Energy's strategic energy management (SEM) program. While the company has always emphasized sustainability and energy efficiency, the Leidos-led SEM program through Wisconsin Focus on Energy introduced Cree Lighting to the 50001 Ready energy management tools. The 50001 Ready program ultimately offered Cree Lighting a

comprehensive structure for systematically integrating energy performance and continual energy improvement into normal business operations at all levels.

“The Cree Lighting energy team showed great discipline in staying on schedule to get their energy management system ready, which has become an integral part of the company’s broader sustainable strategy.”

Mark Stover, Program Operations Manager
Leidos strategic energy management (SEM) implementer for Wisconsin Focus on Energy

Implementing a 50001 Ready Energy Management System

- **Real energy savings:** Over the 18-month period of implementing an energy management system, from December 2018 to May 2020, the production side of the facility ***improved its energy performance by 18% and the paint shop’s performance improved by 4%***. The implemented energy management system will help ensure these savings endure and grow over the coming years.
- **Big savers:** Setting the facility HVAC temperature controls to the industry standard for each operation curtailed wide fluctuations observed in HVAC efficiency across shifts. To date, this has been the biggest single contributor to energy consumption reduction. In addition, improving preventive maintenance systems and elevating energy awareness throughout the facility also led to significant savings.
- **Energy management team:** The 11-member energy team includes the heads of most departments, including the paint shop manager and head electrician.
- **Procurement:** As a part of the 50001 Ready process, Cree Lighting has integrated energy efficiency into the organization’s procurement process to support more strategic equipment choices that factor in projected savings over the full-service life of the equipment. In most instances, these analyses reveal proven cost benefits to investing slightly more at the outset to obtain energy savings that persist over time, for instance purchasing a variable-speed drive to control a pump motor.
- **Time commitment:** Completing the 25 tasks in the Navigator tool over the 18-month period required the collective equivalent of approximately one full-time employee. Estimating this time commitment was challenging since the Cree Lighting team effectively integrated energy management system implementation into its regular business and management systems.

“Cree Lighting is dedicated to environmental sustainability—from producing sustainable solutions for our customers to making sure our facilities manage energy efficiently. Implementing 50001 Ready gave us the structure to continuously improve our energy performance.”

Rick Rosser, Vice President of Global Operations and Supply Chain
Cree Lighting

Key Takeaways

Cree Lighting used 50001 Ready to engage a large number of employees at the facility, sparking

thoughtful observations and discussions. This elevated awareness of energy performance has increased staff suggestions on energy-saving opportunities and enhanced compliance with best practices, such as shutting off idle equipment when appropriate. The facility recently implemented single-point shutoffs for electricity and compressed air on several production lines. By the end of 2020, all lines will have this shut-off capability and these practices will be audited regularly.

“Our employee suggestions program developed through our 50001 Ready implementation has helped the Green Team identify many of our best sustainability opportunities—with more than 300 suggestions implemented last year.”

Tim Ulrich, Environmental, Health and Safety Director
Cree Lighting

Cree is expanding the well-structured processes introduced through 50001 Ready into other parts of the organization to help the plant achieve additional sustainability objectives. For instance, in addition to Cree’s Energy Team, a Green Team (composed of employees from all business areas and shifts) meets every two weeks to review progress toward corporate sustainability goals. Members of the Green Team have adapted 50001 Ready practices to coach co-workers to continue their recycling and energy conservation activities and are observing real results.

Implementing 50001 Ready improves Cree Lighting’s business and reinforces brand image. 50001 Ready provides a clear indicator for customers that Cree Lighting “walks the talk” on energy and environmental performance. The resulting cost savings improves the bottom line at the facility and underscores the value of energy management when customers consider embodied life-cycle energy in making purchasing decisions.

OTHER BENEFITS

Annual Energy Use

Annual Energy Cost

Energy Savings

Cost Savings



Cree Lighting, a Company of IDEAL INDUSTRIES, Inc. Photo courtesy of Cree Lighting



A multi-station product assembly line in Cree Lighting's Racine, WI manufacturing facility. Photo courtesy of Cree Lighting



Cree Lighting employee displaying a street light housing in front of an assembly line. Photo courtesy of Cree Lighting